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Immunization of chickens with a recombinant *Ascaridia galli* protein results in parasite-specific IgG with no protective effect against infection

D. R. Fink¹, T. W. Schou², L. R. Norup³, T. Dalgaard³, H. R. Juul-Madsen³, and G. Jungersen¹

¹National Veterinary Institute, Technical University of Denmark, Copenhagen, Denmark

²DHI, Hørsholm, Denmark

³Department of Animal Health and Bioscience – Immunology and Microbiology, Faculty of Agricultural Science, Aarhus University, Denmark

Parasite infections are causing increasing concern in the poultry production industry, because the prevalence of several roundworms is rising. This is mainly due to changes in rearing systems, where the European Union ban of conventional cages for egg laying hens has led to an increase in the number of chicken flocks held in floor pens and free-range systems, which are associated with higher parasite burdens. In order to prevent infections with the nematode *Ascaridia galli*, development of a vaccine is desirable. In this study, three groups of 10 chickens were immunized with three different adjuvants together with a recombinant *A. galli* antigen. The adjuvants were CAF01, Emulsigen, and STV, and the antigen was Ag-NPA-1, a lipid-binding protein from the nematode polyprotein allergen/antigen family. Three immunizations were given i.m. with three-week intervals. A fourth group of 10 chickens was immunized with CAF01 and Ag-NPA-1, but only the first immunization was i.m., the next two immunizations were oral. A fifth group of 10 birds was injected i.m. with PBS as a control. The three groups that only received i.m. immunizations developed significantly higher Ag-NPA-1-specific serum IgG levels than the i.m./oral group and the control group. Three weeks after the last immunization, all animals were infected with 500 embryonated *A. galli* eggs, and 8 or 9 days post infection chickens were slaughtered and larvae numbers determined. No statistically significant differences in larvae numbers were observed between any of the groups, suggesting that the immunizations did not confer protection against *A. galli* infection.